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QUICK REFERENCE FOR STATUS OF ENVIRONMENTAL INDICATORS					
Name and EPA I D Number	Location (City or Town)	Current CA725 Decision	Current CA750 Decision	If Current Decision is Negative, Projected Date for Positive EI	
				CA725	CA750
Rhodia, Inc (Formerly Albright & Wilson Americas, Inc) SCD 003 358 389	Charleston, South Carolina	YE	NO		Dec 31, 2002

DATE September 11, 2001

SUBJ Evaluation of Rhodia, Inc 's status under the RCRIS Corrective Action Environmental Indicator Event Code CA725
EPA I D Number SCD 003 358 389

FROM Duke Taylor
Operations Engineering Section
Division of Waste Management
Bureau of Land and Waste Management

THRU Shelly Sherritt, Section Manager S. Sherritt
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TO John T. Litton, P E , Director
Division of Waste Management
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Narinder Kumar, Branch Chief
RCRA Program Branch
Waste Management Division
U S EPA Region IV

I. PURPOSE OF MEMO

This memo is written to formalize an evaluation of Rhodia's status in relation to the following corrective action event code defined in the Resource Conservation and Recovery Information System (RCRIS)

Current Human Exposures Under Control (CA725),

Concurrence by the Bureau of Land and Waste Management Division of Waste Management's Director is required prior to entering these event codes into RCRIS Your concurrence with the interpretations provided in the following paragraphs and the subsequent recommendation is satisfied by dating and signing at the appropriate location within the following attachment (Attachment 1)

II. HISTORY OF ENVIRONMENTAL INDICATOR EVALUATIONS AT THE FACILITY AND REFERENCE DOCUMENTS

This particular evaluation is the second evaluation for Rhodia The earlier Environmental Indicator Evaluation was completed June 4, 1998 Data generated during Rhodia's 1994 Phase I RCRA Facility Investigation confirmed the presence of soil and groundwater contamination above health-based concentrations at the site Elemental phosphorous in the sediments of the Ashley River was also a concern due to its ability to spontaneously ignite when exposed to air during low tide Dichlorofenthion (DCFT), a compound for which limited toxicological data exists, is also present in soils and groundwater at the site Because of concentrations of both metals and VOCs above risk-based levels in soils, the presence of DCFT in the soils and the concern with exposure to spontaneously igniting elemental phosphorous in the Ashley River sediments, a score of CA 725 NO was assigned during the June 4, 1998 Environmental Indicator Evaluation

The 1994 Phase I RCRA Facility Investigation also revealed groundwater contamination throughout the site Groundwater at the site is contaminated with arsenic, 1,2-dichloroethane (EDC) and DCFT The groundwater is currently discharging into the Ashley River and has been documented as discharging into the Ashley River as early as 1981 Rhodia has attempted to intercept the flow of contaminated groundwater at the process area of the site by installation and operation of three groundwater interceptor trenches adjacent to and downgradient of the GPU Production Area, however, these trenches have not been successful Therefore, a score of CA 750 NO was assigned to Rhodia during the June 4, 1998 Environmental Indicator Evaluation

III. FACILITY SUMMARY

Rhodia Inc , formerly known as Albright and Wilson Americas, Inc , is a chemical-producing plant located on the east bank of the Ashley River on the northern edge of Charleston, South Carolina, just inside the city limits Three dedicated units produce phosphoric acids and phosphorous halides Five other units produce over 300 distinct chemical products including phosphates, phosphates, alkyl chlorides, and phosphonates Hazardous wastes are generated from solvent and condensate recovery, reactor cleanouts, sludge accumulation, product purification and clean-up operations

The active portion of the facility is bordered by a security fence and Rhodia employs security personnel to guard the entrance to manufacturing areas of the plant The western portion

of the plant is bordered by the Ashley River

Results from the Phase I and Phase II sampling events show that the primary contaminants of concern at Rhodia include the following arsenic, lead, EDC and DCFT DCFT is not a hazardous constituent as defined under R 61-79 261 Appendix VIII and, at the present time, there is limited toxicological data available for this contaminant

IV. CONCLUSION FOR CA725

The determination of a score of NO for CA725 in the previous Environmental Indicator Evaluation was based primarily on the exposed phosphorous-contaminated sediments in the Ashley River This area has been used for both fishing and recreational purposes in the past, and there is a history of encounters of fishermen with the phosphorous contamination in the sediments On July 25, 1999 DHEC approved an interim measures workplan submitted by Rhodia to install a geo-textile cover over the phosphorous-impacted area of the Ashley River sediments Installation of the cover began on Sept 8, 2000 and was completed on Sept 20, 2000 The purpose of this cover was to keep phosphorous-contaminated sediments both moist and stabilized during low tide, when the sediments would be exposed to air Thus far the cover has been effective at doing these two things, thus eliminating any human exposure pathways to the phosphorous-contaminated sediments Furthermore, the majority of the soils across the site impacted with elevated levels of metals and organic compounds are covered with asphalt, structures, vegetation or other landscape covers, thus eliminating worker exposure to these soils Therefore, there is no significant threat of human exposure to soils contaminated with metals and chemicals at concentrations above risk-based levels A status code of CA725 YE is recommended for this site

V. CONCLUSION FOR CA750

A groundwater interceptor trench is currently being installed at Rhodia to intercept all groundwater that is migrating into the Ashley River Therefore, further evaluation of groundwater migration control for this site will be deferred until December 2002, approximately a year after the starting operation date of the interceptor trench The current status code of CA750 NO is recommended until this date

VI. SUMMARY OF FOLLOW-UP ACTIONS

Rhodia has submitted two separate interim measure workplans to address both human exposure risks to elemental phosphorous in sediments of the Ashley River and

groundwater migration at the facility The Interim Measure Workplan for Elemental Phosphorous Stabilization was submitted in September 1998 and approved by the Department on June 25, 1999 Completion of this project was done on September 20, 2000 The Interim Remediation Plan for Groundwater was submitted in July 2000 and approved in December 2000 Installation of a groundwater interceptor trench is currently in progress and should be completed by December 2001

Version Interim Final
2/5/99

ATTACHMENT 1
DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION
RCRA Corrective Action
Environmental Indicator (EI) RCRIS Code (CA725)
Current Human Exposures Under Control

Facility Name. Rhodia, Inc (Formerly Albright and Wilson Americas Inc)
Facility Address. 2151 King Street Extension Charleston, SC 29405-6124
Facility EPA ID #: SCD 003 358 389

1 Has **all** available relevant significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air, subject to RCRA Corrective Action (e g , from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

_X_ If yes - check here and continue with #2 below,

____ If no - re-evaluate existing data, or

____ If data are not available skip to #6 and enter"IN" (more information needed) status code

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e g , reports received and approved, etc) to track changes in the quality of the environment The two EI developed to date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater An EI for non-human (ecological) receptors is intended to be developed in the future

Definition of "Current Human Exposures Under Control" EI

A positive "Current Human Exposures Under Control" EI determination ("YE" status code) indicates that there are no "unacceptable" human exposures to "contamination" (i e , contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all "contamination" subject to RCRA corrective action at or from the identified facility (i e , site-wide))

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA) The "Current Human Exposures Under Control" EI are for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and do not consider potential future land- or groundwater-use conditions or ecological receptors The RCRA Corrective Action program's overall mission to protect human health and the environment requires that Final remedies address these issues (i e , potential future human exposure scenarios, future land and groundwater uses, and ecological receptors)

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i e , RCRIS status codes must be changed when the regulatory authorities become aware of contrary information)

2 Are groundwater soil, surface water, sediments, or air **media** known or reasonably suspected to be **"contaminated"**[1] above appropriately protective risk-based "levels" (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action (from SWMUs, RUs or AOCs)?

Media	Yes	No	?	Rationale/Key Contaminants
Groundwater	X			Arsenic EDC (Phase I and II RFI Data)
Air (indoors)[2]		X		*Phase II RFI Report
Surface Soil (e g , <2 ft)	X			Arsenic, Lead, EDC, DCFT (Phase I and II RFI Data)
Surface Water		X		*Phase II RFI Report
Sediment	X			Arsenic, elemental phosphorous (Phase I and II RFI Data)
Subsurface Soil (e g , >2 ft)	X			Arsenic, Lead, EDC. DCFT (Phase I and II RFI Data)
Air (outdoors)		X		*Phase II RFI Report

____ If no (for all media) - skip to #6 and enter "YE," status code after providing or citing appropriate "levels" and referencing sufficient supporting documentation demonstrating that these "levels" are not exceeded

__X__ If yes (for any media) - continue after identifying key contaminants in each "contaminated" medium, citing appropriate "levels" (or provide an explanation for the determination that the medium could pose an unacceptable risk), and referencing supporting documentation

____ If unknown (for any media) - skip to #6 and enter "IN" status code

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1 "Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriately protective risk-based "levels" (for the media, that identify risks within the acceptable risk range)

2 Recent evidence (from the Colorado Dept of Public Health and Environment, and others) suggest that unacceptable indoor air concentrations are more common in structures above groundwater with volatile contaminants than previously believed This is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above (and adjacent to) groundwater with volatile contaminants) does not present unacceptable risks

Rationale

* There are no occupied buildings covering the EDC- and DCFT-contaminated areas, and existing cover will prevent wind release of surface soil particulate for the majority of impacted areas Conservative modeling indicates that arsenic impact on the Ashley River at the point of discharge results in a concentration of 0 05 ug/l, which is unlikely to threaten human health

3 Are there **complete pathways** between "contamination" and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions?

Summary Exposure Pathway Evaluation Table
Potential **Human Receptors** (Under Current Conditions)

"Contaminated" Media	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food [3]
Surface Soils	No	No	No	Yes	N/L	N/L	No
Sub-surface Soils	No	No	No	Yes	N/L	N/L	No
Sediments	No	No	No	Yes	N/L	N/L	No
**Groundwater	See note under Rationale						

Instructions for Summary Exposure Pathway Evaluation Table

1 For Media which are not "contaminated" as identified in #2, please strike-out specific Media, including Human Receptors' spaces, or enter "N/C" for not contaminated

2 Enter "yes" or "no" for potential "completeness" under each "Contaminated" Media -- Human Receptor combination (Pathway)

Note In order to focus the evaluation to the most probable combinations, some potential "Contaminated" Media - Human Receptor combinations (Pathways) are not assigned spaces in the above table (i e, **N/L - not likely**) While these combinations may not be probable in most situations, they may be possible in some settings and **should be added as necessary**

____ If no (pathways are not complete for any contaminated media-receptor combination) - skip to #6, and enter "YE" status code, after explaining and/or referencing condition(s) in-place, whether natural or man-made, preventing a complete exposure pathway from each contaminated medium (e g , use optional Pathway Evaluation Work Sheet to analyze major pathways)

_X_ If yes (pathways are complete for any "Contaminated" Media - Human Receptor combination) - continue after providing supporting explanation

[3] Indirect Pathway/Receptor (e g , vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc)

_____ If unknown (for any "Contaminated" Media - Human Receptor combination) - skip to #6 and enter "IN" status code

Rationale and Reference(s) On-site workers construction workers and recreational fishermen are the only groups considered in determining human exposure pathways since these are the receptors with any likelihood of coming into contact with this site Virtually all contaminated soils are covered by asphalt, structures, vegetation or other landscape covers (Phase II RFI Report), thus eliminating the on-site worker exposure to surface and sub-surface soils In September 2000, Rhodia installed a geotextile cover over the phosphorous-contaminated sediments in the Ashley River, preventing any exposure to on-site workers or recreational fishermen to these sediments In case of any construction activities, OSHA-required health and safety precautions will be followed to limit release of and contact with subsurface soil contamination, and limited respiratory exposure during such activities will be controlled

**Groundwater will be re-evaluated in December 2002, approximately a year after installation of the groundwater-interceptor trench The current CA750 status of NO will therefore be recommended until this time

4 Can the exposures from any of the complete pathways identified in #3 be reasonably expected to be "significant"[4] (i.e., potentially "unacceptable" because exposures can be reasonably expected to be 1) greater in magnitude (intensity, frequency and or duration) than assumed in the derivation of the acceptable "levels" (used to identify the "contamination") or 2) the combination of exposure magnitude (perhaps even though low) and contaminant concentrations (which may be substantially above the acceptable "levels") could result in greater than acceptable risks)?

__X__ If no (exposures can not be reasonably expected to be significant (i e , potentially "unacceptable") for any complete exposure pathway) - skip to #6 and enter "YE" status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to "contamination" (identified in #3) are not expected to be "significant "

____ If yes (exposures could be reasonably expected to be "significant" (i e , potentially "unacceptable") for any complete exposure pathway) - continue after providing a description (of each potentially "unacceptable" exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to "contamination" (identified in #3) are not expected to be "significant "

____ If unknown (for any complete pathway) - skip to #6 and enter "IN" status code

Rationale and Reference(s) See Rationale for Answer to Question #3

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[4] If there is any question on whether the identified exposures are "significant" (i e , potentially "unacceptable") consult a human health Risk Assessment specialist with appropriate education, training and experience

5 Can the "significant" **exposures** (identified in #4) be shown to be within **acceptable** limits?

____ If yes (all "significant" exposures have been shown to be within acceptable limits) - continue and enter "YE" after summarizing and referencing documentation justifying why all "significant" exposures to "contamination" are within acceptable limits (e g , a site-specific Human Health Risk Assessment)

____ If no (there are current exposures that can be reasonably expected to be "unacceptable")- continue and enter "NO" status code after providing a description of each potentially unacceptable ' exposure

____ If unknown (for any potentially "unacceptable" exposure) - continue and enter "IN" status code

Rationale and Reference(s) _____

6 Check the appropriate RCRIS status codes for the Current Human Exposures Under Control EI event code (CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (and attach appropriate supporting documentation as well as a map of the facility)[5]

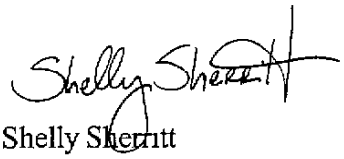
__X__ YE - Yes, "Current Human Exposures Under Control" has been verified Based on a review of the information contained in this EI Determination, "Current Human Exposures" are expected to be "Under Control" at the Rhodia Inc facility, EPA ID # SCD 003 358 389, located at 2151 King Street Extension, Charleston, South Carolina under current and reasonably expected conditions This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility

____ NO - "Current Human Exposures" are NOT "Under Control "

____ IN - More information is needed to make a determination

Completed by  Date September 11, 2001

Duke Taylor
Engineer Associate II

Supervisor  Date September 11, 2001

Shelly Sherritt
Section Manager
Division of Waste Management
Bureau of Land and Waste Management

Locations where References may be found
Bureau of Land and Waste Management, South Carolina Department of Health and Environmental Control, 2600 Bull Street, Columbia, South Carolina 29201

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5 FINAL NOTE: THE HUMAN EXPOSURES EI IS A QUALITATIVE SCREENING OF EXPOSURES AND THE DETERMINATIONS WITHIN THIS DOCUMENT SHOULD NOT BE USED AS THE SOLE BASIS FOR RESTRICTING THE SCOPE OF MORE DETAILED (E.G , SITE-SPECIFIC) ASSESSMENTS OF RISK.

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